

REMARKS

Claims 13 - 24 remain in this application. Claims 13, 14, 23, and 24 have been amended. Reconsideration of this application in view of the amendments noted is respectfully requested.

Claims 13 - 24 were rejected under Section 112, second paragraph as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Therefore, claims 13, 14, 23, and 24 have been amended to make the claims definite and/or to correct lack of antecedent bases.

Particularly, the examiner stated that in claim 13, there is no antecedent basis for "the construction" and that there is no further apparatus limitation that structurally defines "construction." Therefore, claim 13 has been amended to replace "construction" with --the said one of the blade holder and doctor blade--, which has antecedent basis in the claim. Also, for grammatical reasons the word "is" was eliminated from the phrase "the doctor unit is characterized in that."

Further, the examiner stated that claim 14 is apparently incomplete since the necessary apparatus structure that defines how the optical fiber is adapted to act as a sensor is omitted. Therefore, applicant has amended claim 14 to read that the doctor unit is characterized in that --at least one of the said at least one sensor includes at least one optical fiber installed inside the said one of the blade holder and doctor blade.--

Furthermore, the examiner stated that in claim 23, it is unclear what structure permits the filaments to act as "sensory organs." Also, the examiner stated that it is not clear what or how the optical fiber is connected to an electrical crystal and that the property "resistance in the optical fiber changes" is not understandable. Therefore, applicant has amended claim 23 to read that the doctor unit is characterized in that --the optical fiber includes filaments and that the optical fiber is operatively connected to an electrical crystal, which is arranged to send a signal when the resistance in the optical fiber changes due to the wear of the filaments.-- Hence, the optical fiber includes filaments and the optical fiber

is operatively connected to an electrical crystal. Also, the resistance in the optical fiber changes due to wear of the filaments, as stated in the claim.

Moreover, the examiner stated that in claim 24, it is not clear what is being claimed and that it appears that a method of operation is claimed. Specifically, the examiner pointed to the phrase "the doctor blade is arranged between momentary and continuous duration . . ." Applicant has therefore amended claim 24 to read --the sensor is operatively connected to the selected monitoring system and arranged such that the duration of sensor measurement is settable in a range between momentary and continuous measurement.-- Applicant submits that claim 24 is not a method of operation.

Based upon the foregoing, applicant submits that claims 13 - 24 are now definite, and applicant therefore requests that the Section 112, second paragraph rejection be withdrawn.

Claims 13 and 24 were rejected under 35 U.S.C. 102(b) as being anticipated by or, in the alternative, under 35 U.S.C. 103(a) as being obvious over Esser et al. (U.S. Patent No. 5,221,351, hereinafter "Esser"). Applicant respectfully traverses this rejection. To begin, the doctor unit of Esser includes a coating blade, but not a doctor blade. A coating blade does not scrape, it only drags; on the other hand, a doctor blade does scrape. The coating blade is arranged the "right way" with respect to the surface being coated. In other words, the coating blade is arranged in the same direction as the direction of web movement. This is shown in Figs. 3 and 4 of Esser. Further, it is mentioned in the description that "the front spreading surface 18 of the blade will always be parallel to the web surface, viewed in the running direction of the web 32." (Column 3, lines 55 - 60). In contrast, the doctor blade/scraping blade according to the present invention is always positioned the "wrong way" with respect to the surface to be doctored. In other words, the doctor blade is arranged against the running direction of the web. Hence, the doctor blade really scrapes the web and at the same time this causes the doctor blade to wear considerably. This also keeps the doctor blade sharp.

Furthermore, the coating blade of Esser is not in direct contact with the surface being coated or the surface of the backing roll. There is always at least a layer of coating substance or in addition, a paper web between the coating blade and the surface of the roll. (See Fig. 4 or column 2, lines 30 – 36). Hence, the coating blade of Esser is made for applying substance to a surface, while the doctor blade of the present invention is made for scraping substance from a surface. For these reasons, the wear of the coating blade of Esser is not such a remarkable problem, while the wear of the doctor blade of the present invention is.

In Esser, the problem being addressed is the angle of the coating blade, because the amount of substance applied is directly proportional to the blade angle. The device of Esser tries to take into account all changes in the operating conditions in order to maintain a set blade angle. (See column 1, lines 11 – 16). Thus, in Esser, only the change of blade angle is observed. To observe the blade angle, Esser for example uses a tilt switch, a LED, a laser, or an ultrasound source. When the angle of the coating blade changes, the angle is adjusted back to the default value. For example, the adjustment is made by turning the coating blade holder with a servomotor. This may be easily done, if the blade doesn't wear. If the blade wears, the angle of the front spreading surface of the blade simultaneously changes. Then the default value isn't valid. The device of Esser, however, cannot measure the wear or stress of the blade. Furthermore, in the specification of the present application, it is mentioned that "the change in the angle between the blade holder and the blade carrier does not indicate wear with sufficient accuracy." (See page 1, lines 23 – 25). In practice, the wear of the doctor blade varies in the cross direction (CD) of the paper machine. In other words, the doctor blade usually wears least at its ends and generally the most in its center. Observation of the change of the blade angle with the device of Esser does not by any means indicate how much the blade has worn or what the wear profile of the blade is. Also, the device of Esser is incapable of observing or measuring the stress on the blade.

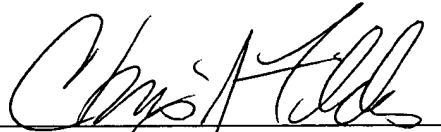
In sum, Esser is directed towards solving a different problem than the present invention, namely maintaining the angle of a coating blade. Therefore, the device of Esser senses the blade angle. On the other hand, the present invention is concerned with measuring the wear and stress on a doctor blade. The device of Esser is incapable of measuring the wear and stress on a blade. For these reasons, Esser does not teach or suggest the present invention. Therefore, applicant respectfully requests that the Section 102(b)/103(a) rejection of claims 13 and 24 as being anticipated by or obvious over Esser be withdrawn.

This amendment and request for reconsideration is felt to be fully responsive to the comments and suggestions of the examiner and to present the claims in condition for allowance. Favorable action is requested.

Respectfully submitted,

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A handwritten signature in black ink, appearing to read "Chris Fildes", written over a horizontal line.

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